(12) **United States Patent**
Liu et al.

(10) **Patent No.:** **US 7,502,786 B2**
(45) **Date of Patent:** **Mar. 10, 2009**

(54) **VISUAL METHOD AND APPARATUS FOR ENHANCING SEARCH RESULT NAVIGATION**

(75) Inventors: **Shixia Liu**, ShangDi Beijing (CN); **Zhong Su**, Beijing (CN)

(73) Assignee: **International Business Machines Corporation**, Armonk, NY (US)

(*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 169 days.

(21) Appl. No.: **11/619,665**

(22) Filed: **Jan. 4, 2007**

(65) **Prior Publication Data**

US 2007/0162443 A1 Jul. 12, 2007

(30) **Foreign Application Priority Data**

Jan. 12, 2006 (CN) 2006 1 0001267

(51) **Int. Cl.**
G06F 17/30 (2006.01)
G06F 17/00 (2006.01)
(52) **U.S. Cl.** **707/5**; 707/4; 715/200
(58) **Field of Classification Search** 707/5, 707/4; 715/200
See application file for complete search history.

(56) **References Cited**

U.S. PATENT DOCUMENTS

7,054,870 B2 *	5/2006	Holbrook	....	707/10
7,334,195 B2 *	2/2008	Gemmell et al.	....	715/841
2005/0144158 A1 *	6/2005	Capper et al.	....	707/3

* cited by examiner

Primary Examiner—Tony Mahmoudi
Assistant Examiner—Paul Kim
(74) *Attorney, Agent, or Firm*—Gibb & Rahman, LLC

(57) **ABSTRACT**

A visual method for enhancing search result navigation, comprising: obtaining a first search result from a search engine; clustering the first search result to get clustering information; calculating the correlations between the clustering information and the ranked list of the first search result, and performing visualization processing on the clustering information; and displaying the visual cluster hierarchy and the ranked list of the first search result in a joint manner based on the correlations. When a cluster is selected, further searching is performed and the search result is clustered again. Using the present invention, through combining a traditional ranked list of search results and the visual cluster hierarchy of these search results to display them in a joint manner, a convenient way is provided for the web user to find the potential correlations between the visual cluster hierarchy and the ranked list of the search results. Besides, through dynamically searching and clustering more search results again, the web user may get more detailed and more accurate search results easily.

1 Claim, 6 Drawing Sheets